Here is the program from the 2021 ARPA-E Low-Energy Nuclear Reactions Workshop:

https://arpa-e.energy.gov/events/low-energy-nuclear-reactions-workshop

Several of the presentations from the Workshop can be downloaded from URL links in this program.

Here is one of the PowerPoint slides from the workshop:

Barham, O., et al. *HIVER Electrochemistry Energy Project Update*. in ARPA-E LENR Workshop. 2021. Navsea Warfare Centers.

https://www.lenr-canr.org/acrobat/BarhamOhiverelect.pdf

Low-Energy Nuclear Reactions Workshop

October 21-22, 2021

The objective of this workshop was to explore compelling R&D opportunities in Low-Energy Nuclear Reactions (LENR) [1], in support of developing metrics for a potential ARPA-E R&D program in LENR. Despite a large body of empirical evidence for LENR that has been reported internationally over the past 30+ years in both published and unpublished materials, as well as multiple books, there still does not exist a widely accepted, on-demand, repeatable LENR experiment nor a sound theoretical basis. This has led to a stalemate where adequate funding is not accessible to establish irrefutable evidence and understanding of LENR, and lack of the latter precludes the field from accessing adequate funding. Building on and leveraging the most promising recent developments in LENR research, ARPA-E envisions a potential two-phase approach toward breaking this stalemate:

1. 1. Support targeted R&D toward establishing at least one on-demand, repeatable LENR experiment with diagnostic evidence that is convincing to the wider scientific community (focus of this workshop);
2. 2. If phase 1 above is successful (metrics to be determined), support a broader range of R&D activities (to be defined later) toward better understanding of LENR and its potential for scale-up toward disruptive energy applications, thus setting up LENR for broader and more systematic support by both the public and private sectors.

Thursday, October 21, 2021 (All Times Eastern)

Start Time (ET)	Event	Speaker(s)
11:00 AM	Meeting logistics	Dr. Robert Thompson, Booz Allen Hamilton, Support Contractor to ARPA-E
11:05 AM	**Welcome!**	Dr. Jennifer Gerbi, Deputy Director for Technology and Acting Director, ARPA-E
Setting the stage		
11:10 AM	**Workshop goals**	Dr. Scott Hsu, Program Director, ARPA-E (15+5)
11:30 AM	**Summary of LENR research in Japan**	Dr. Shinya Narita, Professor, Iwate University (25+5)
12:00 PM	**Summary of the 1989 and 2004 DOE reviews**	Dr. Katharine Greco, Fellow, ARPA-E (15+5)
12:20 PM	**Experimental status of LENR**	Dr. David Nagel, Research Professor, George Washington University (25+5)
12:50 PM	Break/buffer	
Moving forward		
1:00 PM	**Toward a LENR reference experiment**	Dr. Florian Metzler, Research Scientist, MIT (15+5)
1:20 PM	Lightning round: LENR experiments	(10+2)-minute presentations + open Q&A/discussion, 5 speakers **Brillouin's LENR Reactor and System Identification** Dr. Fran Tanzella, Brillouin Energy **Lattice Confinement Fusion Gas Cycling Experiments** Dr. Theresa Benyo, NASA Glenn Research Center **Condensed Matter Nuclear Reactions in Nano-Materials** Mr. Larry Forsley, NASA, Global Energy Corporation High-Resolution Calorimetry for Probing Reactions of Nanopowders with D_2 Dr. Pramod Reddy, Professor, U. Michigan

		Pd/D Co-Deposition Dr. Pam Mosier-Boss, Global Energy Corporation
2:35 PM	Break/buffer	
2:45 PM	Lightning round: Technical best practices	(10+2 each tentative) **Particle Detector Systems for LENR – Low Count Rate Particle Measurements** Dr. Robert Ledoux, Program Director, ARPA-E **Low-Energy Nuclear Reactions: An Electrochemical Engineering Perspective** Mr. Bertrand Neyhouse, MIT **Calorimetry for LENR** Dr. David Fork, Google **New Technology for Accurate LENR Measurements and Materials** Dr. Robert Duncan, Professor, Texas Tech
3:45 PM	Introduction to breakout discussion #1	Dr. Scott Hsu, Program Director, ARPA-E
3:50 PM	Break/buffer	
4:00 PM	Breakout discussion #1	All (Technical R&D oriented discussion topics) Group 1: Quantitative Technical Metrics for a LENR Program Group 2: Expected Standards for Experimental Protocols & Measurements Group 3: Needed Improvements in LENR Experiments and Measurements Group 4: Desired Program-Wide Shared Resources (diagnostics, facilities, modeling, etc.) NOTE: All registered participants have been assigned to breakout groups based on the preferences selected during registration.
4:55 PM	**Our Quest for a Reference Experiment**	Dr. Michael McKubre (retired), SRI International (25+5)

5:25 PM	Day-1 closing remarks, followed by optional virtual social (on Gatherly)	All

Friday, October 22, 2021 (All Times Eastern)

Start Time (ET)	Event	Speaker(s)
11:00 AM	Welcome to day 2	Dr. Scott Hsu, Program Director, ARPA-E
11:05 AM	**HIVER Electrochemistry Energy Project Update**	Dr. Oliver Barham, Mechanical Engineer and Project Manager, Naval Surface Warfare Center Indian Head (25+5)
11:35 AM	**Lessons learned from Project Charleston**	Mr. Matt Trevithick, Senior Program Manager, Google Research (20+5)
Technology-to-Market and Partnerships		
12:00 PM	**Technology-to-Market (T2M) for LENR**	Mr. Sam Wurzel, T2M Advisor, ARPA-E (15+5)
12:20 PM	Lightning round: Government-agency perspectives	Lt. Col. Dr. Charlton "David" Lewis, Program Manager, DARPA DSO **Lattice Confinement Fusion** Mr. Leonard Dudzinski, Chief Technologist, Planetary Science Division, NASA Dr. Lali Chatterjee, Program Manager, DOE Office of Science, High Energy Physics (5 each followed by Q&A/discussion)
12:40 PM	Break/buffer	
12:50 PM	Lightning round: Private-sector partnerships and perspectives	**Clean Planet's path and plans** Ms. Masami Hayashi, Global Strategy Office Manager, Clean Planet Mr. Thomas Darden, CEO, Industrial Heat **Brillouin Energy Corporation (video/external link)** Mr. Robert Godes, CTO, Brillouin Energy **LENRIA as a partner in LENR development and commercialization** Mr. Steve Katinsky, Director, LENRIA

		Limitless Space Institute Overview Dr. Harold "Sonny" White, Director, Advanced R&D, Limitless Space Institute Solid State Fusion Prize Mr. Carl Page, President, Anthropocene Institute (5 each followed by Q&A/discussion)
1:45 PM	Introduction to breakout discussion #2	Mr. Sam Wurzel, T2M Advisor, ARPA-E
1:50 PM	Break/Buffer	
1:55PM	Breakout discussion #2	All (T2M-oriented discussion topics) Group 1: LENR Development Path Barriers (Technical & Commercialization) Group 2: Potential LENR Markets and Techno-Economic Targets Group 3: Partnership with Government, NGOs, and Private Sector/Investors Group 4: Improving Public and Scientific Perceptions of LENR NOTE: All registered participants have been assigned to breakout groups based on the preferences selected during registration.
2:45 PM	Closing remarks	All, followed by Dr. Scott Hsu, Program Director, ARPA-E
3:00 to 5:00 PM	One-on-one meetings	10-minute one-on-one meetings between workshop registrants and ARPA-E team

Disclaimer:

endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

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[1] For the purposes of this workshop, LENR is defined as a not-yet-understood process (or class of processes) characterized by system energy outputs characteristic of nuclear physics (typically >> 1 keV/amu/reaction) and energy inputs characteristic of chemistry (~eV/atom).